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# NSIDE





#### Russ Mansford, Strategic Ambulance Advisor to the Department of Health and HART Programme Lead.

# A FUNDAMENTAL ROLE IN NATIONAL RESILIENCE

The launch of two more HART teams in Great Western and South East Coast Ambulance Services, a steady rise in the number of call-outs for HART teams and a highly successful first HART conference and exhibition in Liverpool are just some of the major talking points since the last edition of Inside HART.

Indeed, the Great Western HART team was pressed into action with two challenging call-outs within its first 24 hours of operation. The first involved the team deploying using safe working at height equipment to treat a patient at risk in the eleventh storey window of a tower block in Bristol, whilst the second involved the partial collapse of a building onto a car.

Both of these incidents illustrated how the specialist training of HART personnel can ensure more appropriate care for patients whilst at the same time providing a safety net of care for responding colleagues, in these cases fire and rescue personnel.

The South East Coast HART team – launched in July and based at Ashford in Kent - also hit the ground running and responded to two major fires in its first week of operation, cementing strong relationships with local fire and rescue services and providing invaluable support to local operational command.

The team was also deployed to reports of a man who had endured an epileptic fit which had seen him fall and become trapped at the foot of a steep ravine. The HART team's specialist training and equipment played a vital role in his rescue and treatment – so much so that this will be recreated and shown on the BBC show Real Rescues in November.

Our other operational HART teams in the North

West, North East, Yorkshire, East Midlands, West Midlands, East of England and London continue to prove their worth, day in, day out, and are increasingly recognised in the corridors of power as being a fundamental part of the ambulance service's response to mass casualty events – either accidental or deliberately caused.

We will soon welcome Security Minister Baroness Neville Jones as a visitor to the London HART team, following other recent HART visits from high profile politicians including Health Minister Lord Howe, the former Parliamentary Under-Secretary for Security and Counter-terrorism Lord West and the former Foreign Secretary David Miliband. Lord Howe formally opened the new home of the East of England HART team in September and was extremely impressed with the HART capability.

In short, the message that HART now plays a fundamental part in the national resilience infrastructure of our country is being absorbed at the highest level.

In June, over 500 delegates and visitors were attracted to Inner Cordon 2010, our first ever national HART conference and exhibition in Liverpool. The event was a huge success and our exhibitors were rewarded with new business enquiries whilst our delegates got plenty of opportunities to network and hear some of the best speakers in the business. You can view a short film of the event on our

website (www.ambulancehart.org - under the Conference Exhibition tab) and read more about the event in this issue of Inside HART.

The HART programme also continues to receive significant interest from Government bodies overseas, keen to emulate what we've achieved with HART in England. Colleagues in countries as far afield as the USA, Australia, Japan, Germany and many European Union countries have either shown interest in, or are in dialogue with us about, developing their own versions of HART. Additionally, some of the clinical developments that have come about because of HART – such as our clinical simulation facility – have attracted significant interest from other pre-hospital clinicians in the UK and abroad.

We have also been invited to do a demonstration of the HART capability by the European Commission at an EU conference in November, further underlining the huge progress we are making.

As ever my thanks go to the HART teams who respond to these challenging and sometimes dangerous call-outs each and every day. They should be proud of their achievements so far.



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## PRIME MINISTER VISITS WMAS HART



As part of his busy campaign schedule during the election the Prime Minister David Cameron visited West Midlands Ambulance Service, where he met members of the HART team and got a chance to see the latest HART equipment and vehicles. A clearly impressed Mr Cameron was full of praise for the work of the ambulance service and as you can see by the picture, even took time out to be interviewed in front of the HART forward command vehicle!

#### COVER SHOT:

East of England Chief Executive Hayden Newton and the HART Team prepare for the visit of Lord Howe for the formal opening of the HART facility. Cover photo by Philip Mynott.



#### LORD HOWE OPENS NEW HART STATION

Health Minister Lord Howe visited the East of England Ambulance Service on 09 September 2010 to open their new ambulance station in Cambridgeshire.

The purpose built station will be the home for the Trust's hazardous area response team (HART) and the regional operations training department. Visiting the centre to talk to staff about how the services are working, Health Minister Lord Howe said:

"I'm delighted to see first-hand how the HART paramedics operate and the excellent services they provide to patients, often under very difficult circumstances."

"As set out in the White Paper we want the health service to focus on improving patient outcomes. The East of England's Ambulance Service is a great example of this. In an emergency situation it is of utmost importance that paramedics have the right skills and equipment to provide the best possible care for patients, and ultimately save lives."

Hayden Newton, Chief Executive said:

"This development has only been made possible by the significant investment made by the Department of Health in new



premises, state of the art vehicles and equipment, extensive training and selection, and the appointment of 42 paramedics who form the dedicated HART team.

The Trust is extremely grateful to Health Minister Lord Howe who attended the ceremony and officially opened this excellent facility."



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The Emergency Services Show takes place on Wednesday 24th and Thursday 25th November at Stoneleigh Park, Coventry. HART will be there and this unique event promotes multi agency collaboration by bringing together everyone in the UK involved in an emergency.

The free to attend exhibition will provide access for the ambulance and medical industry to the latest equipment and technology, ideas and initiatives which could be used in the medical industry all in one place and is a growing event for personnel in the ambulance service. Last year's event attracted over 4,000 attendees in total, with visitors from a range of roles across the UK's ambulance services more than doubling on the previous year.

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#### **Dr Dave Sloggett** Visiting Lecturer at the **HART Training Faculty**

## **INDIVIDUAL JIHAD:** THE CBRN **DIMENSION**



Whilst HART teams exercise and prepare for the day when CBRN weapons are deployed by terrorists in an attempt to commit acts of mass murder, in their day-to-day work HART teams are increasingly dealing with a chemical and biological sub-set of the full panoply of CBRN capabilities, as individuals and small groups experiment with their deadly effects. Dr Dave Sloggett, visiting lecturer at the HART Training Faculty, examines recent trends and the historical context of the use of CBRN materials in small-scale events.

It is a cliché to say that for anyone involved in planning and preparing for a CBRN event that they must 'expect the unexpected'. Given the apparent random nature of any CBRN attack and its likely consequences in terms of casualties, it is probably sound advice. No matter how hard you try, it is difficult to second guess a terrorist group in terms of simple characteristics of an attack such as precisely where and when they will strike.

While there is some evidence that terrorist groups, such as Al Qaeda, do like to conduct operations that can be related to specific dates in history, it is difficult in the extreme to cover off all the possible events and dates that might be used to justify an act of mass murder. History simply has too many examples from which to pick a likely event. Some, of course, are of a greater profile.

The tenth anniversary of the attacks in the United States on September 11th 2001 will be a point where many in the counter-terrorism world will hold their breaths. Many commentators have pointed to the irony of the 911 linkage with the United States emergency phone number. It does offer a rational explanation of the timing of the attack. The Olympics in the United Kingdom in 2012 will provide a similar opportunity for terrorists to gain publicity on the world stage bringing together the imagery of Munich in 1972 (where members of the Israeli Olympic team were taken hostage and eventually murdered by the terrorist group Black September) with the 24 by 7 coverage that is now available through the media and so cleverly exploited by the terrorist attacks in Mumbai. Since that date in November 2008 a whole new form of terrorism has entered the lexicon of counter terrorism



authorities across the world, most notably in Pakistan, as a Mumbai-genre of terrorist attack has developed with media coverage a central aim of each event.

Predicting when and where terrorists will strike is difficult. HART teams have to operate in a highly uncertain environment, where at any time they may be taken way outside of their normal operating environment into a situation where all their training and skills need to be rapidly mobilised to help patients in what are bound to be extremely testing situations. Julius Caesar seemed to capture the essence of this when he offered the view that 'no one is so brave that he is not disturbed by something unexpected'. Preventing a response becoming dislocated by the sheer magnitude of the attack is crucial.

Preventing a response becoming dislocated by the sheer magnitude of the attack is crucial.

Paradoxically, recent events have changed the immediate dynamic of the threat. It has shifted from the large-scale to the small-scale as Al Qaeda and its affiliates have changed their tactics; moving towards acts of what is being called 'individual jihad'. Al Qaeda appears to have accepted the current position that their efforts to conduct major acts of terrorism are being frustrated by greater international cooperation between intelligence and law enforcement agencies.

The move to 'individual jihad' is clearly a response designed to maintain momentum in their campaign of murder and violence. They need to conduct these continuing attacks to maintain their relevance on the world stage. They cannot afford to disappear. They need what Margret Thatcher once described as the 'oxygen of publicity' when she was referring to the activities of Irish Republican extremists. Her observation that 'democratic nations must try to find ways to starve the terrorist and the hijacker of the oxygen of publicity on which they depend' still finds resonance today as terrorists ruthlessly exploit the media for their own ends. The announcement of the change of tactics has been made across a wide range of forums and media outlets by leading Al Qaeda ideologies calling upon people to conduct these acts because of their 'obligation to conduct jihad'.

The aim of promoting individual jihad is to reach out to anyone with sympathies to the aims and objectives of Al Qaeda to persuade them to undertake random acts of violence aimed at killing people and spreading the fear of further attacks. The people that might carry out such operations are called 'lone wolves' by the counter terrorism authorities. In the United Kingdom the cases of Andrew Ibrahim and Nicky Reilly are examples where individuals plotted and planned to undertake attacks. The potential for such acts to be based upon a CBRN element should not be ignored. Recent history provides us with some interesting

The idea of a combination of the unexpected attack from a lone wolf using chemical and biological agents is not far fetched. A study produced by Dr Seth Carus, the Deputy Director of the National Defense University's Centre for the Study of Weapons of Mass Destruction in Washington DC, highlighted how so-called 'lone wolves' had been responsible for the majority of cases involving the illegal procession of biological agents. Citing the case in 1996 of a United States laboratory technician working in Dallas Hospital the report illustrates how Diane Thompson could use her position within the health sector to obtain a rare strain of Shigella dysenteriae to infect many of her co-workers by contaminating pastries. In 2007 a similar series of events occurred when a United States microbiologist, Carol-Anne Bond, attempted on more than 20 occasions to poison people as a result of her marital disputes.

Neither of these events were linked to religious extremism. In 1995 however Larry Wayne Harris, another United States microbiologist with links to white supremacist groups, was arrested when they found freeze dried Yersinia pestis (the organism responsible for the plague) at his home. This event is reminiscent of the arrests and subsequent convictions of Ian Davison and his son Nicky who were found to have been extracting ricin from castor beans in their house in Burnopfield in County Durham in 2010. They were both categorised by the police as 'white supremacists'. Anarchists called the Minnesota Patriots Council also attempted ricin extraction in 1991 and 1992 as they used information contained in 'cookbooks' that were being circulated amongst certain supremacist



groups at the time. All of these examples illustrate how the CBRN threat may present itself in a variety of different ways.

Whilst the extreme right wing appears to be familiar with the potential of CB weapons, the other major attack from recent history was launched by a disaffected United States weapons scientist called Dr Bruce Ivins. He was a microbiologist who worked at the United States Army Medical Research Institute of Infectious Diseases. He had access to anthrax in the course of his work. Fearing his research was about to be discontinued he manufactured a highly refined powder-form of anthrax which he mailed to some key political and media leaders. Whilst he took precautions to seal the envelopes he appeared to forget that small spores could still escape through the fabric of the material out of which they were made. From the point of posting the letters anthrax was effectively leaking out across each node of the United States postal service through which they passed. The attack resulted in the death of five people who accidentally became exposed to the anthrax strain. Dr Ivins was not a committed jihadist, he was a research scientist.

Spending the majority of your time in a normal state only to be launched, at short notice, into the midst of a potentially deadly attack is difficult to imagine. However this is the reality for the HART teams.

Maintaining skill levels in such circumstances is difficult; hence the need for regular exercises. Skills fade is a cause of concern, yet ironically unexpected events – such as those involving a spate of anthrax deaths related to contaminated heroin and the new 'fashionable' approaches to suicide involving the use of

chemicals are providing HART teams with opportunities to maintain their readiness levels.

This trend towards the small-scale CB event also has an international dimension. In Afghanistan evidence has emerged of attempts by the Taliban to target Explosive Ordnance Disposal [EOD] teams with biological agents being added to the Improvised Explosive Devices. A number of attempts have also been reported since May 2010 to poison schoolgirls in Afghanistan using a form of gas. The CB element of the CBRN space seems to be never far away from their thinking.

Today's problem in Afghanistan could so easily become tomorrow's in the United Kingdom – where the Internet provides the means by which people across the world can rapidly become empowered to commit similar atrocities. The recent cases of drugs users in the United Kingdom who have died from heroin contaminated with anthrax graphically illustrates the potential for CB related materials to have effects on the individual. Since Christmas 2009 over 50 people have been admitted to hospital and 13 have died. This contamination of heroin by anthrax is extremely rare with the last known outbreak occurring in Norway in 2000.

Whilst each event is a tragedy in its own right it does offer HART teams circumstances where they will maintain their skill levels during periods between exercises. This raises an interesting observation. HART teams train for the large-scale event but in practice on a day-to-day basis what they actually encounter may be of a very different scale but still requiring appropriate skills, whether CBRN or USAR related, to be employed. Learning lessons from



history is important. It helps to prepare and be ready. That requires a holistic approach to the threat that looks out across the international stage seeking developments that might be a cause for concern.

George Bernard Shaw, the Irish playwright, once observed that 'if history repeats itself, and the unexpected always happens, how incapable must Man be of learning from experience'. Whilst it is easy to understand his sentiment, and he does have a point, it would be nice – from a HART viewpoint anyway – to prove him wrong.

## GOT A QUESTION FOR DR DAVE SLOGGETT?

In future issues Dr Dave Sloggett will give written answers to reader's questions. If you'd like to submit a question, send it to the editor Carl Rees, at carl,rees@londonsea.com.

We regret we cannot guarantee to publish every question and Dave cannot enter into correspondence privately.

## South East Coast HART team launches

The new South East Coast HART team was launched in July and is based in Ashford, Kent. The team will respond to incidents across South East Coast Ambulance Service's Kent, Sussex and Surrey region and, if required, in support of other services beyond the South East Coast boundary.

SECAmb HART Manager Matthew England said: "SECAmb HART has already been assigned to a number of incidents which made use of their additional skills. After all the training the team is now ready to respond quickly to major incidents and other incidents with hazardous environments across the region.

"Everyone in the team has worked extremely hard to get to this stage but this is where the real hard work begins. I know all the HART members are looking forward to making a difference by working with their colleagues in SECAmb and with their fellow emergency services."











**CASE STUDY** 



# Ambulance HART takes TETRA into the inner cordon with Motorola Intrinsically-Safe hand-portable radios



#### Redefining the role of paramedics in support of the UK's national capabilities programme

Hazardous Area Response (HART) teams comprise specially recruited and trained personnel providing the ambulance response to major incidents involving hazardous materials and environments. Following a number of major incidents in recent years, and faced with an increasing threat of a chemical, biological, radiological or nuclear (CRBN) event, ambulance staff were initially trained and equipped to work within the 'warm zone' just outside of the inner cordon of incidents involving hazardous materials (HAZMAT).



Recognising that more lives could be saved if paramedics were able to operate within the inner cordon, the Ambulance Service Association (ASA) and the Department of Health developed the HART programme, establishing the first units at the London and West Midland Ambulance Services in 2007. With 12 Ambulance HART teams to be deployed across England by 2011, each team will comprise 42 paramedics working in seven teams of six, and supported by a fleet of specialist vehicles.



#### Ensure mission-critical radio communications within the inner cordon of major incidents involving hazardous materials and environments

The Ambulance HART programme continues to evolve to provide paramedics with the necessary skill-sets and equipment to support a wider range of operations. This remit takes in Incident Response Unit (IRU); Urban Search and Rescue (USAR), including water/flooding scenarios, rescues at depth (e.g. in tunnels) or height; and Personal Protective Equipment (PPE), Civilian Responder 1 (CR1) and Powered Respirator Protective Suits (PRPS).

Working with a broad range of emergency services, specialist agencies and healthcare organisations, Ambulance HART relies on the Airwave TETRA network for nationwide radio coverage, inter-agency and dedicated talk groups, resilience and security. However, HART paramedics also needed intrinsically-safe hand-portable terminals able to deliver robust yet flexible modes of operation, since they must enter hot zones dressed in PPE, use breathing apparatus for extended periods of time, and be able to work at depth or height.

#### Ambulance HART adopts Motorola's MTP850Ex intrinsically-safe hand-portables and ATEX-rated intrinsically-safe accessories to meet unique operational challenges

Ambulance HART is being migrated to the Airwave digital communications network under the Ambulance Radio Programme. Dedicated for use by the emergency and public safety services, the Airwave service is the world's largest and most complex Terrestrial Trunked Radio (TETRA) system, and is based on Motorola's Dimetra IP TETRA network solution. Currently serving about 200,000 users, it forms an integral part of the UK Government's critical national infrastructure, and leads the way in implementing highly secure, resilient, reliable and scalable radio coverage and capacity. The Ambulance HART solution comprises dedicated access to the Airwave service, a range of hand-portable and in-vehicle radio sets, and mobile data terminals. However, as the HART teams were being migrated, it was recognised that their requirements were slightly different to those of the Ambulance Service.

#### **Customer name**

James Price, HART Manager, West Midland Ambulance Service & Communications lead for the Ambulance HART programme.

#### Company

Ambulance HAR

#### Service provider

Airwave

#### Industry name

Ambulance/Blue-light emergency response

#### Product

- Motorola MTP850ex ATEX TETRA Radio
- Range of ATEX-compatible accessories

#### **Solution Features**

- Best in class audio, simplified keypad with large buttons
- Comprehensive user safety features (GPS, man-down alarm)
- Class-leading ATEX & IECEx specifications
- Throat microphone, acoustic ear tube, and large PTT button

#### Benefits

- Designed for use in explosive gas and dust environments
- High quality communication with comprehensive user safety
- Hands-free operation in protective clothing and breathing apparatus
- Best in class audio performance in noisy environments



"Bearing in mind that we are wearing breathing apparatus and a protective chemical suit for long periods, the intrinsically-safe radios have to be simple to use, and guarantee crystal clear and reliable communications. We need to know that when we press the PTT button, our call will get through..."

James Price, HART Manager at West Midlands Ambulance Service

"To work within the 'hot zone', we needed intrinsically-safe, hand-portable terminals and a range of specialised accessories to meet our unique operational challenges, and also to comply with the Government's 'Gold Standard' for command and control centre technologies and arrangements," recalls James Price, HART Manager at West Midlands Ambulance Service, and the IT and Communications lead for the Ambulance HART programme. "Having taken a good look at what was available we opted for Motorola's intrinsically-safe hand-portable terminals as being the best-fit. Motorola were also able to provide a one-stop solution in terms of the accessories we needed for hands-free operation whilst wearing all manners of PPE and breathing apparatus."

Designed to be operated in potentially explosive environments (gas and/or dust), Motorola's MTP850Ex radios were selected, together with a range of intrinsically-safe accessories. Rated to ATEX & IECEx specifications, the intrinsically-safe hand-portables provide safe and reliable communication in hazardous environments, with each HART team receiving ten terminals, plus two spares, for 'hot zone' operations. These are operated in combination with the Motorola ATEX-rated accessories, including a throat microphone that fits to the user's sternum, a large push-to-talk (PTT) button, an acoustic ear tube for clarity of communications in noisy conditions, and a spare battery for extended field operations.

Crucially, the Motorola intrinsically-safe hand-portables include GPS (global positioning system) for accurate location of users via the radio, whilst a motion-sensitive accelerometer recognises if the user has collapsed, and issues a 'man-down' alarm to the command and control centre.

## Clearer communications, inter-agency collaboration and improved patient and user safety reduce the impact of major incidents on Ambulance Trust resources

Provided as a fully-managed service built on stringent service level agreements, the Airwave service delivers a complete critical communications platform to Ambulance HART, ensuring that its paramedics are in contact via a highly-advanced TETRA system supporting group calls, direct mode and trunked mode operation (DMO/TMO). Ambulance HART has also become one of just a few agencies in the UK to use intrinsically-safe TETRA terminals within the inner cordon of CBRN and HAZMAT incidents.

"Bearing in mind that we are wearing breathing apparatus and a protective chemical suit for long periods, the intrinsically-safe radios have to be simple to use, and guarantee crystal clear and reliable communications. We need to know that when we press the PTT button, our call will get through," Price continues. "With our dedicated talk groups and Motorola intrinsically-safe radios, we now have a platform that supports us when we are working in hazardous areas, whilst allowing us to increase both patient and operator safety."

As a national asset, HART paramedics must also assist with NHS Trust '999' emergency calls, and answer requests for mutual assistance. The Airwave service can be re-configured instantly to allow all users to communicate on a single, shared system, enabling multiple agencies to collaborate more effectively. "One of the main benefits of Ambulance HART is that we can deal with large incidents, and reduce the impact on the Ambulance Trusts' core resource, so that performance standards can be maintained."

#### Robust yet flexible communications whatever the scenario

Ambulance HART employs Motorola's intrinsically-safe terminals whenever it's called into action in hazardous scenarios. "Operational flexibility is integral in enabling Ambulance HART to fulfil its role. Motorola's MTP850Ex has a user interface that is easy to see, audio that is easy to hear in noisy scenarios, and simple controls that can be used when wearing thick gloves. It is designed with end users, for end users, to meet their day-to-day needs," states Natalia Escribano, Account Director Airwave, at Motorola.

"Ambulance HART tends to be seen as a 'big bang' major incident agency, but for me, it's all about the day-to-day differences we can make, and the operations we can perform in a wide range of environments. The Airwave service has been adopted by multi-agency colleagues, which enables greatly increased interoperability, meaning that collectively, we can be more effective in our deployment of resources, and in our response to whatever the incident may be," concludes Ambulance HART's James Price.

For more information please contact your local Motorola Authorised Dealer or Distributor



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CASE STUDY: TETRA Ambulance HART



## HART HAZMED TRAINING PROVES INVALUABLE AT MAJOR YORKSHIRE FIRE

#### By Steve Lewis EMT Yorkshire HART

In the early hours of Monday the 24th May 2010, the Yorkshire HART team was activated to a major fire at Grosvenor Chemicals Ltd in Huddersfield, a chemical processing plant and COMAH site. I was the duty HAZMED which, at first, had me cursing my luck for not only was this the biggest, most daunting job I was yet to face as HAZMED, but it was also the biggest job West Yorkshire Fire & Rescue had been faced with for some considerable time!

Our base is about twenty five miles from the incident and on quiet roads and blues it was about thirty five minutes response time. Within a few miles of the incident we could dispose of the use of 'sat nav' for the sky was glowing vivid orange with an acrid stench of burning chemicals permeating strongly into the cab of the vehicles. We arrived into a surreal scene with a long line of appliances hemmed in by rows of terraced, stone faced houses, through which thick smoke steadily crept causing a ghostly aurora around the blue flashing lights.

My first thought was, 'what a place to RV' and we were still a few hundred metres from the fire! This was the designated spot for the fire command and control vehicle that had been set up just before our own arrival. The plume was going straight over our heads. Still things are never text book are they? To add to the drama several loud explosions could be heard coming from the site.

West Yorkshire Fire and Rescue Service had activated twenty five pumps which amounted to half of their available operational strength for that evening and other units were brought in from Manchester. We established our command unit next to the fire command unit and along with the team leader Mani Dulay, I liaised with the duty HAZMAT and Incident Commander.



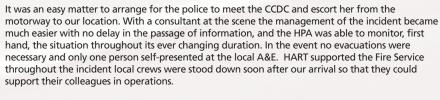
From the outset it was obvious that we were dealing with a major incident complicated by the fact that despite being a COMAH site there was scant information as to what chemicals were actually stored there. Luckily there was only a small number of staff on site who were all accounted for but the detailed data we required was in an office in the centre of the fire and obviously unreachable. However, enough information was gleaned from employees to know that several tons of pesticides were on fire.

Rather than commit fire fighters into the arena the decision had been made to simply monitor and contain, until it was certain what we were dealing with. Once the site manager was at the scene he was able to provide more information, although this was still quite sketchy. We learned that 'Tank sixty-six' contained the highly volatile Dimethylformamide, which if airborne can cause severe respiratory problems for at least a half mile radius. It also floats on water and is a major pollutant.



Up until this point the on call CCDC had been content to simply monitor the situation from home and rely on any updates from myself. However with this new information about tank sixty-six the agenda changed. This meant that fire fighters had to be deployed urgently into the hot zone to protect this one particular substance. One characteristic of this substance is that it has a low flash point and doesn't necessarily need to be directly influenced by heat, so keeping it cool was essential.

By now representatives from all relevant agencies had arrived including the local authority in case a major evacuation was needed. Thankfully due to the early hours most local people were blissfully unaware of what was going on. Within the potential evacuation radius was a hospital and several residential nursing homes, in addition to hundreds of private homes. Soon the local population would be getting up to go about their business and it was imperative to get on top of the situation so I requested the HPA to be present at what was a rapidly developing situation.





The Grosvenor Chemicals incident proved an enormous challenge for all emergency services that attended. For the Environment Agency in particular (and sources within the organisation have told me), it was their biggest incident since Buncefield, due both to the amount of pollution that leaked into the local river and the airborne threat.

HAZMED has been a great success in the Yorkshire Ambulance Trust area due to the well tried and tested system we have in place for liaison with HPA direct from the scene of an incident. During this particularly testing incident vital information was shared quickly between the relevant agencies, without which the outcome could have been very different.







## LONDON HART TEAM DEPLOYS IN EXERCISE MILO

## Evaluating London's Health and Emergency Services response

London's HART team worked alongside other Health and Emergency Services in the capital in June to exercise their response to an incident involving not only mass casualties, a toxic chemical, but also injured patients with a variety of disabilities.

The Health Protection Agency (HPA) developed and set up Exercise Milo in East London on June 29 2010 in conjunction with NHS London, on behalf of the Department of Health. The exercise was designed specifically to evaluate how fire, police, ambulance and hospital teams would react to hundreds of casualties, with a few unusual factors thrown in.

The scenario centred on a collision of two mini buses with a lorry carrying acetic anhydride; a chemical which can cause burns, blisters, difficulty breathing and permanent damage if victims are not decontaminated as soon as possible. And another factor that was put into the exercise as part of the scenario; the majority of casualties were disabled athletes, on their way to an international sporting event for the disabled.

London Ambulance Service's HART Coordinator Marc Rainey said: "The exercise was a great example of multi-agency working. It was a very challenging scenario – working with a large number of patients with different disabilities is something we haven't done on such a large scale before. A huge effort was made by all staff, many of whom were working in difficult conditions – wearing full protective suits in extremely hot weather."

Participants in the exercise included London Ambulance Service, Homerton Hospital, City and Hackney PCT, NHS London, London Fire Brigade and the Metropolitan Police Service. In total about 300 players, 96 casualty volunteers and 110 support staff were involved in the exercise.

Gillian Dacey, HPA exercise manager said: "This exercise was set up as an opportunity for organisations such as HART to work together with other organisations, such as other parts of ambulance services, fire, and decontamination teams. Whilst this was a health-led exercise, it required close cooperation between a number of agencies to make it all work."

A report is currently being written about the findings and learning points identified during Exercise Milo. These findings will be used to enhance emergency response procedures to ensure the public gets the best service possible, and our health services are fully prepared for every eventuality.

In a recent review of Arm's Length Bodies, the Secretary of State for Health announced that the Health Protection Agency will lose its status as a Non-Departmental Public Body. Its functions will be transferred to the Secretary of State – in line with his intention to create a national Public Health Service for England. The functions of HPA will continue and will be included in the new Public Health Service.

#### HART DEPLOYED TO INLAND WATER INCIDENT

#### By Wayne Meehan, Yorkshire HART

On Saturday 5th June Yorkshire HART were tasked to attend a water incident at Bolton Abbey, North Yorkshire. The USAR vehicle was dispatched along with an RRV, both containing Inland Water Responders.

Arriving on scene, the USAR operatives established contact with the on-scene ambulance crew who briefed them on the situation. A child had got into difficulties in the water and had been witnessed to have gone under the water and not resurfaced. Family members and bystanders had tried to rescue the child but had failed, and the emergency services were called.

HART liaised with the fire service, police and mountain rescue all of whom were involved in searching the river. A boom had been set up downstream to ensure a safety barrier was in place and spotters had been established both up and downstream. HART set up two equipment dumps along the riverbank each manned by a staff member for any treatment of the casualty and the safety of the rescuers. There was one casualty who required treatment due to the effects of cold water emersion. HART liaised with the police to establish an inner and outer cordon.

The remaining members of the team were dispatched to provide full HART cover utilising the HART Forward Command Vehicle. As time passed, cave rescue and police divers arrived at scene. After a considerable period of time under water the body was recovered to the beach and HART transferred the child to a waiting ambulance.

Despite the unfortunate outcome, HART worked effectively as a team and were well received by other agencies on scene. This job highlighted the need for the Inland Water Responder Course and how this could be utilised and extended in such scenarios in the future.





We were able to demonstrate the capabilities and proffessionalism that HART can bring to inner cordon working.





## HART CALLED TO CHEMICAL SUICIDE IN ESSEX

#### By David Robinson, HART Paramedic, East of England Ambulance Service

At 0848 on 20th September 2010 East of England HART were passed the details of an apparent chemical suicide in Braintree Essex. Initial information suggested a vehicle with two occupants both possibly dead with signs on the window warning people not to enter as hazardous gases were present.

A local RRV had attended the scene and quickly indentified the need for HART and made an initial assessment, from a safe distance, that both patients were unfortunately showing no signs of life. HART mobilised the forward reconnaissance vehicle and the USAR vehicle from the base and also one of the HART specific RRVs direct to scene. The second RRV returned, en-route, to the HART base to collect the communications vehicle.

The HART supervisor arrived on scene in the USAR vehicle with a colleague and they quickly liaised with the on scene silver commanders from Ambulance, Fire and Police. Inner and outer cordons had been established and the surrounding industrial units evacuated. The fire crews were establishing an area for responder decontamination and preparing for an approach to the vehicle in Limited Life Gas Tight Suits (LLGTS) and breathing apparatus (BA).

HART were tasked with setting up a forward kit dump close to the decontamination tent and the access to the hot zone. Standard clinical kit was deployed onto ground sheets to provide medical cover for the responders as well as LLGTS and BA for two wearers and the medical recce bag for deployment into the risk area. The command vehicle arrived and was set up behind the kit dump allowing good access and egress alongside whilst being close enough to be of use for briefings and information

The initial deployment plan was to commit teams of Essex FRS and HART in LLGTS and BA to recover and recognise life extinct. However due to the unknown nature of the gases involved and the need to preserve evidence for the ongoing Police investigation it was decided an initial reccee by a HART operative with two members of Essex FRS in BA was appropriate.

The rationale was that any contaminate was enclosed within the vehicle and as long as this was not opened it would not require LLGTS. A HART team member committed in BA with the FRS team, carrying a still camera and with the body worn camera mounted on his helmet. Whilst the FRS crew assessed the vehicle and the environment the HART team member was able to get up close to the car and get good visual observations of both patients where there were no signs of life. Evidence was gathered in real time via the body worn camera and fed back to the communications vehicle where it could be monitored by the silver commanders of all three services.

This was especially useful as due to the physical environment and wind direction it was not possible to view the vehicle directly from the staging area. It was identified that the signs on the vehicle read "DO NOT OPEN DANGER – WARNING HIGH CONCENTRATION POISON GAS H25". This information was used by the FRS Hazmat officers and the HART team leader to source information relevant to PPE levels and health risks. At this point the focus of the operation became centred on the recovery of the casualties in a safe and controlled manner whilst not disturbing evidence or risking the health of the responders and general public.

A Detection Identification and Monitoring (DIM) team from Kent Fire and Rescue Service arrived on scene and approached the vehicle in LLGTS and BA. They instantly had high readings for Hydrogen Sulphide inside the vehicle however once the vehicle was opened the gas dissipated and the readings fell to zero.

The decision was made to commit two teams made up of one HART operative and three Essex FRS crew to make safe the chemical containers, remove the casualties from the vehicle and complete ROLE. After this had been done, and all other details of the operation completed (editor's note: we are unable to go into further detail due to patient sensitivity) this was the end of the operation and the cordon was moved to just the vicinity of the car itself whilst awaiting collection. Our equipment was stowed and a quick hot debrief conducted with input from all agencies.

The incident ran smoothly and there was an excellent working relationship between the agencies. Information flowed freely and we were able to demonstrate the capabilities and professionalism that HART can bring to inner cordon working. It was pleasing to see HART take pivotal roles within the incident and the mutual respect between the commanders and all the operatives from the various agencies on the incident ground.

This was without doubt a sad incident and our thoughts go out to the families of both casualties but from a HART perspective we are now more aware of the implications of this type of incident and what our response to it should be.







# The whole operation ran smoothly which is a credit to those front line ambulance staff who delivered an exceptional level of care and professionalism.



## SUFFOLK TRAIN CRASH - HART CREWS AMONG THOSE COMMENDED

On Tuesday, August 17, the East of England Ambulance Service's major incident plan was invoked when a call was received to a report of a train in collision with a sewage tanker on a level crossing in Little Cornard, Suffolk.

A National Express East Anglia service travelling between Sudbury and Marks Tey struck the lorry shortly after 5.30pm. The lorry was split open in the collision, spilling slurry over the scene. The front carriage of the two-carriage diesel passenger train, which was carrying more than 20 passengers, derailed after the crash but remained upright.

Six ambulances, five officers, a PTS vehicle, Major Incident Unit and a full HART team deployment (as well as two air ambulances) attended the scene. The St John Ambulance Service provided support at the incident.

The decision to declare a major incident was quickly identified as the initial report was that there were a significant number of casualties who were believed to be trapped on two carriages, of which the extent of patient injuries was unknown.

The HART team worked closely with the Fire Brigade to ensure that the scene was made safe, whilst the first Ambulance Officer on scene Matt Broad, ensured that access and egress points were in place to enable rapid transportation of patients once they had been extricated.

Communication was key to the success of the operation throughout the management of this incident, with all officers in place to facilitate the required tasks, such as the casualty clearing station and RVP points.

Karl Edwards, East of England Ambulance Service's general manager for Cambridgeshire attended the scene and said: "All patients were quickly triaged as per the major incident triage sieve and divided into the priority categories. Meanwhile my role as incident silver was to ensure that the gold commander operating from within the Chelmsford health and emergency operations centre was fully updated and with the assistance of other officers on scene, we were able to ensure that correct levels of resources were en route to convey the varying priority patients and that the acute receiving hospitals were aware of which patients they were receiving."

The whole operation ran smoothly which is a credit to those front line ambulance staff who delivered an exceptional level of care and professionalism.

Throughout the incident close partnership working with the other emergency services was paramount and the end result was that all patients were safely and quickly removed from the scene, assessed and treated and then conveyed to the appropriate hospital. The air ambulances were also deemed a great asset to enable those patients with significant injuries to be rapidly transported to the specialist acute trusts for their respective injuries.

David Donegan, chief operating officer for East of England Ambulance Service praised the trust's involvement, saying: "Having attended the scene myself, I was very impressed by the response. Given the rural location and challenging nature of this incident, to have quickly established effective coordination, triage, treatment and transfer of those affected from the scene, is a testament to everyone involved at every level. I would like to express my thanks to all our staff and partners.

"This was the first test of our revised major incident arrangements and first major deployment of the full HART capability, and involved support from emergency care, primary care, the media department, partnership and special operations. While we will always have issues to reflect on, this was a really professional trust-wide response of which we should all be proud.'

Over twenty casualties were triaged at the scene and following their treatment and stabilisation, were conveyed between the two receiving hospitals, in Cambridgeshire and Colchester by land and by air.







The HART Team ensured their operations provided the necessary support to responders and patients alike, this included moving the CCP.

## HART ATTENDS CHEMICAL EMERGENCY AT LUTON AIRPORT

#### By Wesley Routledge, East of England HART Operative

At 0743, on the 23 July 2010, the East of England HART team was mobilised to a full emergency at Luton Airport. Initial reports suggested that members of staff from the airport had been exposed to a liquid from a passenger bag. On arrival the HART team liaised with the Fire & Rescue Service, Ambulance Duty Operations Manager, an RRV and a double manned ambulance (DMA).

The team was asked to set up a Casualty Collection Point (CCP) as an early reconnaissance had identified at least six people had been affected by an unknown substance. The six patients had been isolated away from the substance by the Fire Service prior to HART's arrival. Once the CCP had been set up, the HART members were able to quickly triage these patients who were presenting with minor symptoms, ranging from abdominal aches to dizziness and headaches.

With the help of the crew from the DMA, each patient was fully assessed including the taking of 12 lead ECG's, blood pressures, oxygen saturations and blood glucose monitoring. These findings assisted in the multi agency investigations in establishing the toxicity of the substance in question.

The Bedfordshire and Hertfordshire Multi Agency Initial Assessment Team (MAIAT) was requested to help identify the package that had caused the emergency. Along with airport staff, a passenger had also come into contact with the chemical, through cross contamination from some clothing, and felt a burning sensation.

In Breathing Apparatus, MAIAT staff worked to identify the substance, which transpired to be Hydrochloric Acid. The HART team, using the communication systems on the Command Vehicle quickly identified the medical significance of this and using the latest IT systems the team were able to download all of the necessary medical information from the Health Protection Agency website.

After exposure to fresh air all of the patients' symptoms subsided and no further investigations were required at that stage.

HART also provided medical cover for the Fire Service when a team wearing Breathing Apparatus was deployed to extract all of the bags from the plane's hold. As the incident unfolded, the HART team ensured their operations provided the necessary support to responders and patients alike, this included moving the CCP.

The HART team's intrinsically safe radios and head / body cameras played a pivotal role in the overall communications and management of scene allowing senior managers to view live footage of the incident / patients as the situation progressed. The incident concluded with all passengers being safely escorted from the plane and with all airport staff being monitored and released from the scene.

During the incident HART played a number of roles including being able to provide medical cover for MAIAT and the Fire Service, triage and treat seven patients and assist with the overall management of the scene. The incident was finally stood down roughly five hours after HART were mobilised.







## EAST MIDLANDS HART AT MAJOR OIL REFINERY FIRE By Nick Hurst.

### By Nick Hurst, Acting team leader, Yellow Team, EMAS HART

EMAS HART was called to the Lindsey Oil Refinery in South Killingholme, Lincolnshire, on 29 June after a report that there had been an explosion and subsequent fire and there were a number of personnel unaccounted for.

Yellow team, along with the HART Tactical Advisor, arrived on scene to find that a pressurised hydro carbon splitter had exploded and there were reports of three injured personnel and one person still unaccounted for.

The fire service initially used a combination of foam and water to reduce the temperature of the fire before a search of the surrounding area could commence. HART liaised with EMAS Silver Command and the Fire Service Incident Commander and provided medical cover within the hot zone throughout the incident.

Once the surrounding temperature had reduced a team of fire personnel and one HART paramedic entered the hot zone wearing their incident ground kit, helmets and FFP3 protective respiratory masks and searched one section determining it was clear of casualties. The other sections could not be searched at that time as it was deemed unsafe to do so.

Two hours later the remaining ground section was deemed safe and a further three teams, each accompanied by HART personnel, continued their search operation. Team Leader Nick Hurst said, "The multi-agency teams worked well together and undertook an effective search within the hot zone."

HART continued to provide medical cover for the emergency services throughout the remainder of the incident until the fire was controlled.













## LONDON HART MEETS RAF SEARCH AND RESCUE

London HART paramedics Lee Quinlan and Alex Batty recently spent the day at Royal Air Force Wattisham in Ipswich, Suffolk, to experience at first hand the work of the RAF Search and Rescue Force.

Lee, who has been a Paramedic for 15 years said: "This was an ideal opportunity to gain a greater understanding of the work and role of the RAF Search and Rescue winchman. In my role at HART, I am often first on the scene of an emergency and often don't know what to expect - very similar to the situation the winchmen find themselves in. Being first on the scene in often challenging and hazardous situations adds to the responsibility on our shoulders and we often have to make decisions that can mean the difference between life and death."

Lee and Alex arrived at RAF Wattisham in their HART USAR specialist rescue vehicle, and were able to demonstrate the range of specialist equipment they carry such as water awareness equipment, safe working at height equipment and other rescue tools. Flight Sergeant Shawn Clark was the RAF winchman on duty. He has spent eight and a half years in the role and has attended 316 rescues in that time.

He said: "Similarities between RAF winchmen and NHS paramedics include the use of the same drugs, using the same protocols under the Health Professions Council (HPC) and use of the same, or similar kit. Both winchmen and paramedics will treat any casualty medically, in the same way. We may use different techniques or equipment but the end result should be to deliver the patient to hospital in the fastest time so they get the care they need."

Alex, who has been a Paramedic for eight years said: "I was really keen to see the medical equipment and supplies that are on board the Sea King. It was a great opportunity to learn about the many situations the crew have faced and how they overcome the challenges that the job involves. We also discussed medical techniques and how they can be applied in a search and rescue situation whether it be providing medical treatment on a steep cliff face in the middle of nowhere in force winds or when the casualty is in a collapsed building in the middle of a city centre."

Flight Sergeant Shawn Clark commented: "In the job that Lee, Alex and I do, we come across people who have suffered trauma and are potentially in the worst situation of their lives. The training we receive as search and rescue professionals is fundamental in allowing us to deal with unknown and varied situations. We have to stay focussed and be able to adapt to any situation that we become involved in. It's imperative that in our dealings our safety, the safety of the crew and of the casualty is maintained."









HART USAR Operatives provide medical cover for the Fire Service and Contractors as a collapsed building is stabilised in Easton, Bristol.



## GREAT WESTERN HART TEAM GOES LIVE

The HART team at Great Western Ambulance Service (GWAS) really hit the ground running in September, experiencing two challenging call-outs within its first 24 hours of operation.

The first HART response was to a patient at risk in the eleventh storey window of a fifteen storey tower block in Henbury, Bristol. GWAS HART Paramedics deployed in Safe Working at Height equipment and, along with the Fire and Rescue Service's Rope Rescue Team, located themselves on the roof of the building.

The tactical plan was to provide additional treatment options if the patient became trapped or injured and was out of the range of any ladders. HART paramedics were in a position to be able to descend down to the casualty and provide treatment whilst the Fire and Rescue Service executed the rescue.

In the end, the patient was successfully and safely removed into the care of the police and treated for minor injuries by the HART team on scene.

A few minutes into the Henbury incident, the GWAS Control Room received a second separate incident in Easton, Bristol, involving a partial building collapse onto a car.

A HART rapid response vehicle was mobilised, and along with two other GWAS staff members, the patient from the car was successfully treated and rapidly transported to hospital. However, the building was left extremely unsafe and the Fire and Rescue Service's USAR Team (along with emergency building contractors) were needed to stabilise the structure.

The Fire and Rescue Service requested medical cover for this hazardous activity which was protracted over a number of hours. GWAS HART was able to mobilise a team of two additional USAR Paramedics to provide the necessary cover, which continued well into the night. The personnel going into the hazardous structure had paramedics present who were capable of entering the structure should any injuries occur.

Christian Cooper, GWAS Special Operations Manager, said: "This was an extremely successful start for our HART team which left Fire and Rescue Services and local contractors particularly impressed with the ambulance response provided. We now look forward to developing our Trust's HART capability in the months and years to come."



# TIKINS

#### **EXERCISE CLOVER - IN SAFE HANDS**

On Sunday, June 13, the East of England HART team was invited along to a secret location in Harpenden, to take part in an exercise being run by four of the six Fire & Rescue Services which operate within the East of England.

The scenario was a water leak in an office block. The leak resulted in a number of boxes from a previous occupier getting wet. At the time it was not known the boxes contained a mixture of chemicals used to kill rodents from gardens, and once wet these chemicals became active. So as staff moved these boxes they started to become unwell. In total 200 people were affected by the contaminated boxes.

Arriving emergency resources quickly identified the incident as a chemical incident and the necessary systems were put in place to mobilise the relevant emergency service resources needed to work in a hot zone and to decontaminate patients.

The HART team worked in breathing apparatus and limited life gas tight suits with the Fire and Rescue Service, and the Police, to firstly identify and then treat those seriously ill at the scene. Patients were then moved from the scene and fire fighters from Bedfordshire, Cambridgeshire, Essex and Hertfordshire ensured everyone was decontaminated.

HART manager Steven Moore, who attended the exercise said: "The exercise had been designed to test the working of four different fire services all undertaking decontamination as well as to ensure that those responders from the police, ambulance and fire who entered the hot zone were all working to common safe systems of work."









## FIRST HART EVENT A HUGE SUCCESS

The first national HART conference and exhibition took place in June - a two day event at the BT Convention Centre in Liverpool's regenerated Albert Dock. It was a huge success for exhibitors and delegates alike, establishing itself in year one as the key NHS ambulance event in the annual conference calendar.

Over 500 delegates and visitors operationally involved in the emergency services, as NHS clinicians or in emergency planning, preparedness or civil contingency roles attended the event, as well as a number of international delegates. There were 54 exhibitors almost all of whom reported new business enquiries and the main sponsor was Excelerate Technology.

Speaker Dr Richard Budgett, Chief Medical Officer for Olympics 2012, said:

"This conference is the place where we can think the unthinkable and just going around talking to people here makes me realise the sort of expertise we have in this country and the sort of resources we can call on to make sure we are ready to deal with anything if it does happen."

Each day of the conference ended with a highly popular Question Time style debate led by Liz MacKean of BBC's Newsnight, and Kate Adie was the pre-dinner speaker at the

conference dinner. The HART Special Achievement Awards were presented at this dinner (more about this in the Winter Edition).

Bill Evans, Assistant Chief Fire Officer, Merseyside Fire and Rescue Service said:

"It is so important that senior officers from the fire & rescue service, police force and our associated partners make an effort to be here next year."

John Bonney, President of the Chief Fire Officers Association said:

"This is about an integrated approach to the future and actually seeing all emergency responders at tactical, operational and strategic level is key for the future."

To see a film of the event please visit www.ambulancehart.org.uk/conference/. For details on next year's event email carl.rees@londonsea.com.

Send your letters and feedback about HART, and any corrections concerning Inside HART to carl.rees@londonsea.com

Your feedback is greatly valued!

#### **HART DVDs** AVAILABLE

- Ambulance Staff Inside The Inner Cordon (aimed at a multi-agency audience)
- National Capability Mass Casualty Equipment Vehicles and NHS Emergency Dressings Packs
  - (also available on the HART website)
- So You Want To Join HART?
  - aimed at potential HART team members
  - (also available on the HART website)

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#### USEFUL HART CONTACTS



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